



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,419	04/16/2004	Joseph Ferrara	16-605	9852

7590 01/27/2006
WATTS, HOFFMANN CO., L.P.A.
Ste. 1750
1100 Superior Ave.
Cleveland, OH 44114

EXAMINER

GREENHUT, CHARLES N

ART UNIT PAPER NUMBER

3652

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,419

Applicant(s)

FERRARA, JOSEPH

Examiner

Charles N. Greenhut

Art Unit

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ✓ 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ✓ 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/21/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

I. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim(s) 1-3 is/are rejected under 35 U.S.C. 102(b) as being anticipated by ONO (US 5,405,230 A)

1.1. With respect to claims 1-3, ONO discloses a first and second load lock (31)/(32), having two side entrances (G1)/(G2), and a support (L1-25), valve (E) processing station (1), robot (12a), and aligner (Fig. 14A-15B).

2. Claim(s) 13-18, 20, and 22-25 is/are rejected under 35 U.S.C. 102(b) as being anticipated by MITCHELL (US 6,350,097 B1)

2.1. With respect to claims 13-15, 20, 22-24 MITCHELL discloses providing a low pressure robot having two end effectors (22)/(29), aligning a wafer (40), moving an unprocessed wafer to a first load lock (Col. 6 Li. 18-19), lowering the pressure (41), removing the unprocessed wafer (42), with one end effector (29), and moving it to a processing station having a chuck (45) that attracts and reorients the wafer (46)/(Col. 6 Li. 39-42), while placing a processed wafer with a second end effector (22) into one load lock (43), raising the pressure (52), and inserting an additional wafer (Col. 6 Li 65 et. seq.) before removing the processed wafer (Col. 6 Li. 59-60) from the same load-lock into which it was inserted (Col. 6 Li. 52-53) wherein alternate wafers are placed in alternate load locks (Fig. 5).

- 2.2. With respect to claim 16-18, MITCHELL additionally discloses one load lock (3) above the second load lock (4), moving the collinearly mounted (Fig. 4) end effectors up and down (Col. 5 Li. 24-26) via a drive motor (39).
- 2.3. With respect to claim 25, MITCHELL discloses a first and second load lock (3)/(4) low pressure robot having two end effectors (22)/(29), a second in-air robot (16), pump (Fig. 5), and inherently discloses a controller for causing the movements of the robots.

II. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 4-5 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ONO in view of MITCHELL (US 6,350,097 B1).

- 1.1. With respect to claim 4-5, ONO fails to teach the load locks spaced vertically. MITCHELL teaches the load locks spaced vertically (3)/(4) and the robot having two end effectors (22)/(29) that can be raised and lowered (Col. 5 Li. 23-26). It would have been obvious to one of ordinary skill in the art to modify ONO with the multiple arms of MITCHELL in order to increase throughput.

2. Claim(s) 6 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ONO in view of SOEJIMA (US 6,024,800 A)

2.1. With respect to claim 6, ONO discloses a first and second load lock (31)/(32), enclosure (1), and first robot (12a) moving in an arc. ONO fails to disclose multiple other robots and each load lock having two access openings, and a third access opening. SOEJIMA teaches load lock (11) having two access openings (Col. 3 Li. 53-58) and a third access opening (11b), and multiple other robots (40)/(50). It would have been obvious to one of ordinary skill in the art to modify ONO with the load locks of SOEJIMA in order to increase throughput.

3. Claim(s) 7-12 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ONO in view of SOEJIMA and further in view of MITCHELL.

3.1. With respect to claims 7-12 ONO additionally teaches the opening allowing insertion along different paths and moving in an arc. MITCHELL teaches the load locks spaced vertically (3)/(4) and the robot having two end effectors (22)/(29) mounted to a carriage (Fig. 1) that can be raised and lowered (Col. 5 Li. 23-26) perpendicular (23) to wafers (12). It would have been obvious to one of ordinary skill in the art to modify ONO with the multiple arms of MITCHELL in order to increase throughput.

4. Claim(s) 19 and 21 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over MITCHELL in view of SOEJIMA .

4.1. With respect to claim 19 and 21, MITCHELL additionally discloses the first and second load locks have access openings at an angle with respect to each other and placing an unprocessed wafer on and removing it from an aligner. MITCHELL fails to teach multiple in air robots. SOEJIMA teaches multiple in air robots. It would have

been obvious to one of ordinary skill in the art to modify MITCHELL with the multiple robots of SOEJIMA in order to increase throughput.

III. Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Greenhut whose telephone number is (571) 272-1517. The examiner can normally be reached on 7:30am - 4:00pm EST.
3. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CG



EILEEN D. LILLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600